Butterfly Conservation Dorset Branch
Newsletter No 94

Butterfly Report for 2019

www.dorsetbutterflies.com

Contents

Editor's Introduction

Welcome to the report on Dorset's butterflies in 2019! I was so embarrassed at how late the 2018 report was that I've finished this one very early, so it's going to go out at much the same time as the next newsletter. Well, I say 'go out' but we are currently unable to post anything, as we rely on HQ for the printing of the envelopes and the posting out of the stuffed and franked items (it would cost us a lot more to pay full postage), but their office is currently closed because of the Covid-19 issue.

As I write this in late March 2020, the country is in lockdown due to the virus, so it is uncertain what sort of report we'll be able to do

Photo on front cover: Dark Green Fritillary by Andrew Cooper

for the 2020 butterflies, but whatever is going on with we humans, the butterflies will continue to breed. Perhaps with less car trips to take us out to do transect walks and other monitoring, the butterflies will even benefit in the short term, though we need to know how they are doing if we are to help them in the long term.

Peacock. Photo: Lyn Pullen

We will certainly be needing butterfly sightings reported to the website more than ever, so please do go to www.dorsetbutterflies.com to tell us of the butterflies you see, but do not make any special trips out to look for them until the government eases the travel restrictions. The website-reported sightings are not as scientifically valid as the transect walk results, but they do give us some indication of what is on the wing and where it is.

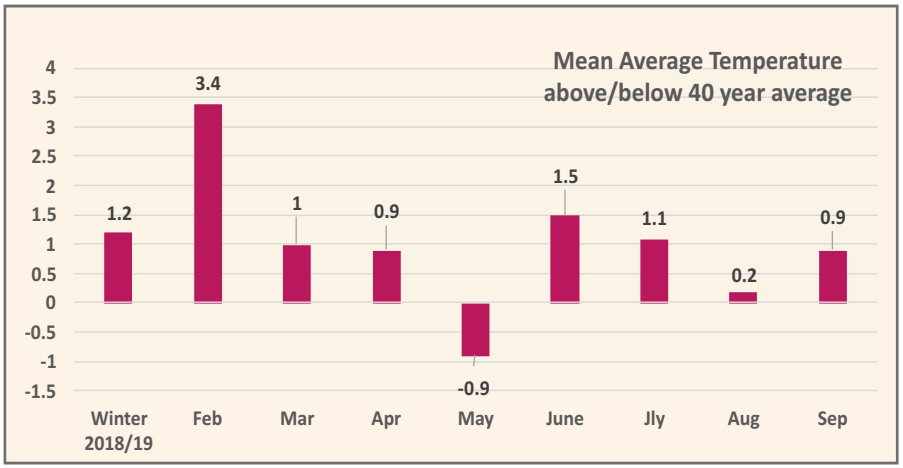
If you are recording in your garden, please do not send daily sightings: you are probably reporting the same butterfly repeatedly. Tell us of any new species that arrive and do a wider count once a week or fortnight. How to report sightings is explained on page 26.

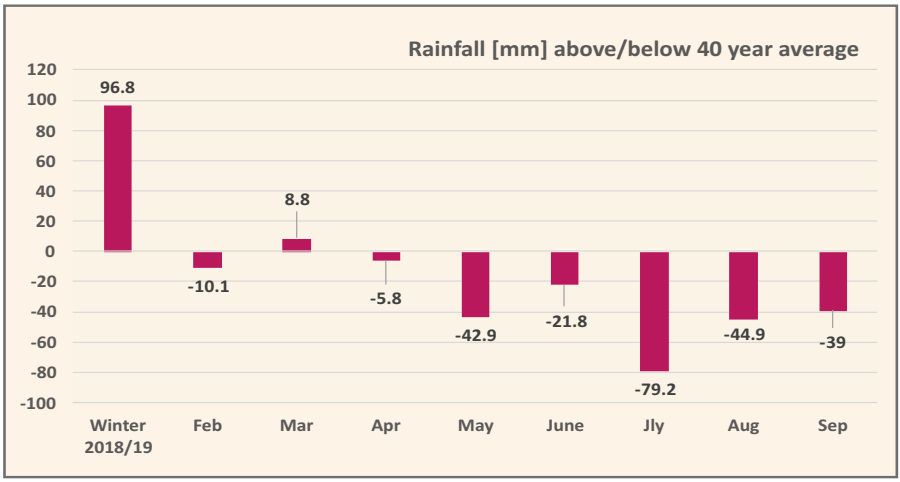
Thanks, as ever, must go to all those who record, verify records, show the records on maps and analyse the data. Dorset is a very special county for butterflies and moths, and all this work helps us to help them.

Lyn Pullen

Weather

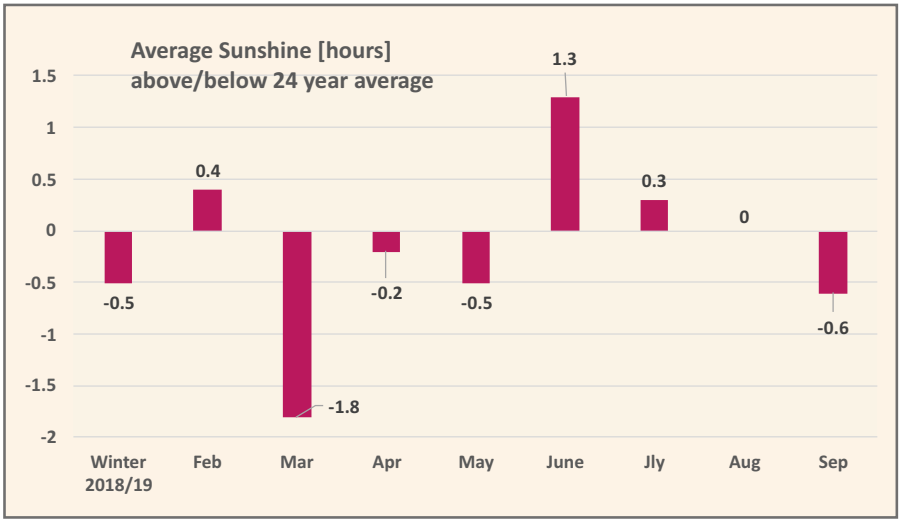
All temperatures in 2019 were above average, except for May. Higher temperatures in spring and summer are probably good for butterflies as long as they are not accompanied by a drought, but winter warmth is not always positive. Research using 37 years of data from the UK Butterfly Monitoring Scheme found





Note: in April weeks two and three, there were faulty maximum temperature readings which have been replaced by less reliable averages.

Weather



that the greatest harm to butterflies was caused by extreme heat during the over-wintering life stage, which had an impact on more than half the species. This could be because warmer conditions encourage disease, or it could be that higher temperatures act as a cue for the adult butterfly or the caterpillar to emerge too early, and be killed by temperatures reducing to the normal colder levels. Extreme cold was more detrimental during the adult periods, but more positive in the other stages.

Rainfall in 2019 was well below average, except in the winter months; this can be detrimental in limiting the development of the plants on which caterpillars feed, or adults nectar. The same research as mentioned above (see overleaf for details) showed that extreme wet during the chrysalis stage adversely affected more than a quarter of UK butterfly species and that drought plays a much more important role in species which have multiple generations in a year than those which only have one generation.

Weather

The picture for sunshine in 2019 was varied, with four periods being at or above average, but five being below average. The effect of sunshine hours is less easy to relate to butterfly health, but one might guess there is some effect in that some flowers will not open unless there is sunshine, reducing access to nectar.

The more extreme weather conditions we are experiencing due to climate change can be good for butterflies, but are more often detrimental. Other points from the research* mentioned included:

- Generalist species suffered more from extreme climate events than specialist species.
- Species' vulnerability to extremes appeared most prominent in the first generation and was primarily driven by exposure to extreme heat, with the exception of negative impacts of rainfall during the adult stage.
- It is often the extent of climate variability that determines a population's ability to persist at a given site.

An interesting short-term effect of temperature on butterflies can be to produce aberrations: i.e. colouration which is different from the norm for the species. We noticed during 2019 that we were receiving more photos of Common Blue females (usually mainly brown) with significant amounts of blue on their wings.

A very blue female Common Blue taken in 2019. Photo: Harold Gillen.

* "Sensitivity of UK butterflies to local climatic extremes: which life stages are most at risk?" McDermott Long, Warren, Price, Brereton, Botham and Franco. Published 31 October 2016 in the Journal of Animal Ecology, Volume 86, Issue 1. Available in full online.

Weather

Given that the effect of the weather depends to an extent on the life stage of the butterfly at any given time, we thought it would be interesting to list the stage in which Dorset species overwinter.

Overwinter as adults:

- Brimstone
- Small Tortoiseshell
- Peacock
- Comma

Overwinter as caterpillars:

- Small Skipper
- Lulworth Skipper
- Large Skipper
- Dingy Skipper
- Small Copper
- Small Blue
- Brown Argus
- Common Blue
- Adonis Blue
- White Admiral
- Purple Emperor
- Small Pearl-bordered Fritillary
- Dark Green Fritillary
- Silver-washed Fritillary
- Marsh Fritillary
- Wall
- Marbled White
- Grayling
- Gatekeeper
- Meadow Brown
- Ringlet
- Small Heath
- Speckled Wood: caterpillar or chrysalis

Overwinter as chrysalises:

- Grizzled Skipper
- Wood White
- Large White
- Small White
- Green-veined White
- Orange Tip
- Green Hairstreak
- Holly Blue
- Duke of Burgundy

Overwinter as eggs:

- Essex Skipper
- Silver-spotted Skipper
- Brown Hairstreak
- Purple Hairstreak
- White-letter Hairstreak
- Silver-studded Blue
- Chalkhill Blue

Non-natives:

- Painted Lady: not known to breed over winter in the UK.
- Red Admiral: not generally native, but a few may overwinter as adults
- Clouded Yellow: not generally native, though a few overwinter on Bournemouth's cliffs in the chrysalis stage.

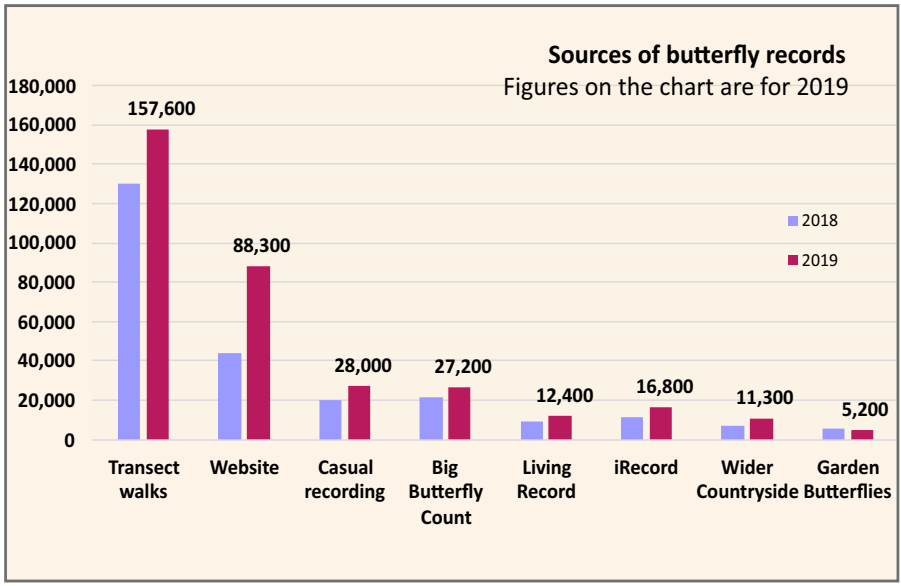
Butterfly Data Sources

Number of butterflies recorded up by 37% !

Green Hairstreak. Photo: Mark Pike

Our first clue that 2019 was overall a good butterfly year can be seen in the graph below: all data sources returned records of more butterflies in 2019 than 2018.

The grand totals were:
2019 - 346,800
2018 - 252,467

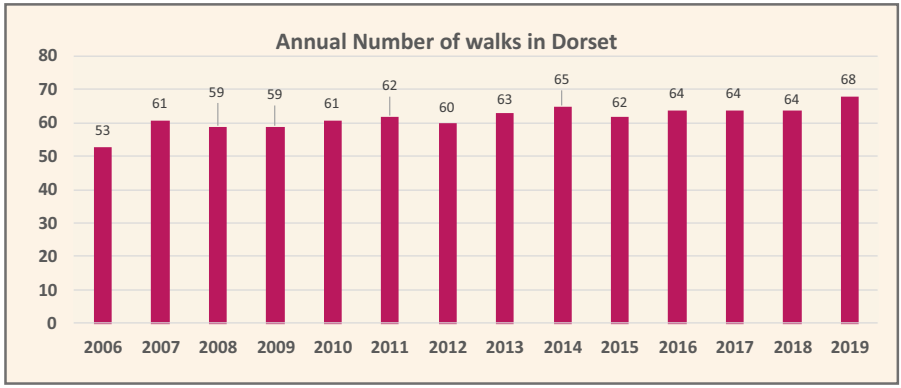


Transect Walk Data

Transect walks are walks along a set route, within certain rules, walked in suitable weather conditions each week from the beginning of April to the end of September. This is occasionally done by one person (usually because the landowner requires this), but more often by a team of walkers.

The data gathered has more scientific validity than casual recording, as the results are more comparable year on year because of the rules under which they are undertaken, which attempt to iron out changes in numbers due to different people recording in different ways. For example, only butterflies seen within 5 metres ahead or 2.5 metres either side of the walker are recorded, and walks are not undertaken if the wind is too strong or the temperature too low.

Dorset has a large number of transect walks, with 2019 reaching an all-time high of 68. Walks will sometimes drop out because of lack of walkers, but this is always a great shame, as it is data built over a long period of time which is the most helpful. There are walks all over the county, so if you feel you could help by walking any of them, please contact Bill Shreeves (see inside back cover). Help can be given with butterfly identification, and you start with the advantage of knowing which species have been seen on the site previously.

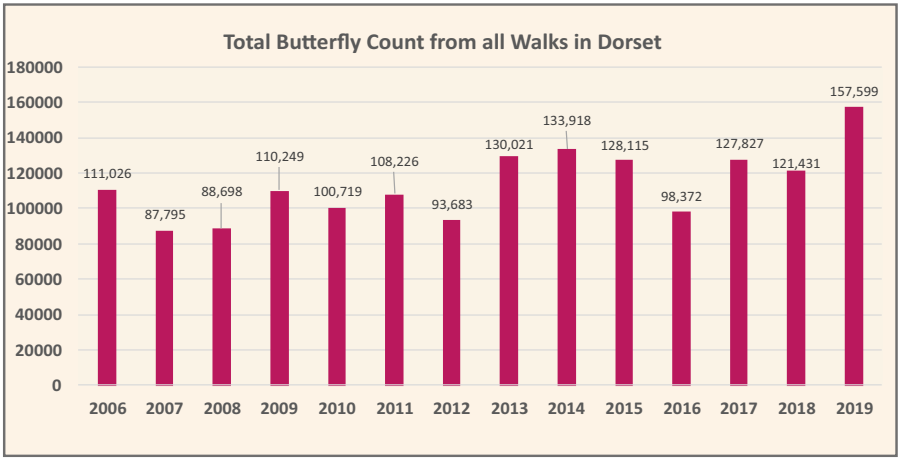


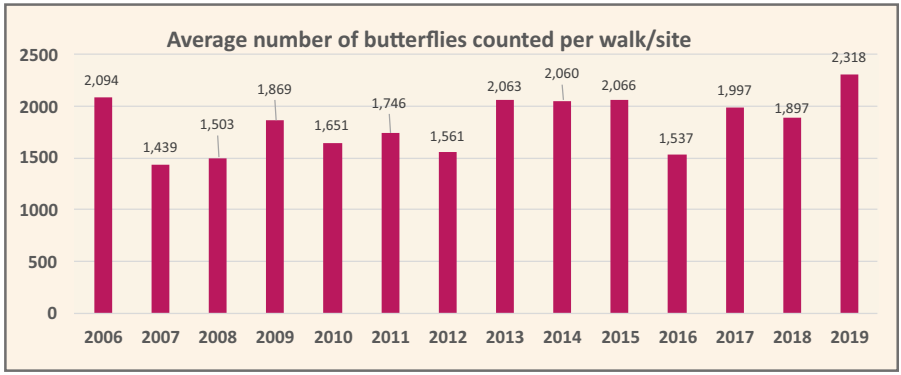
Transect Walk Data

2019 smashes previous records!

- **Record number of transect sites walked**
- **Record number of butterflies counted**
- **Record average of butterflies per walk**

As can be seen from the graphs, the total butterfly count was well up on any previous record since 2006, the next highest being 2014 with 133,918 compared to 2019's 157,599. The average per walk also reached a record number.





Transect Walk Data

Whilst walkers try hard to do their walks, there will be times when the walk does not take place, often because of the weather. The number of missed walks as a percentage of the possible total walks worked out at 10% in 2019, compared to 7% and 8% in the previous two years, but excluding these years, was lower than any other year since 2006.

Our software "Transect Walker Online" uses an averaging system to fill in the gaps for missed walks, but they still count quite heavily against the results, so if you are a walker, please make every effort to do your walk, or contact your walk coordinator if you cannot do it, so they can try to find a substitute.

Highest count on a transect walk: Durlston East with 9,247! Though concentrating on counting with views like this must have been difficult.

Photo: Brian Arnold.

Winning Species in 2019

We class a species as a winner if its count increases (on sites where it is recorded):

- By more than 50% over the previous year (short term)
- By more than 50% on its annual average (long term)

By those criteria, the winners for 2019 were:

In both the long and short term -

- Painted Lady
- Essex Skipper
- Dark Green Fritillary
- Lulworth Skipper
- Orange Tip

In either the long or short term -

- Holly Blue
- Red Admiral
- Marbled White
- Grizzled Skipper
- Marsh Fritillary

Painted Lady. Photo: Luc Michem

Highest number of species seen on transect walks:

North - Fontmell Down: 34
West - Cerne Giant: 33
South - Ailwood Down: 32
East - Badbury Rings: 28

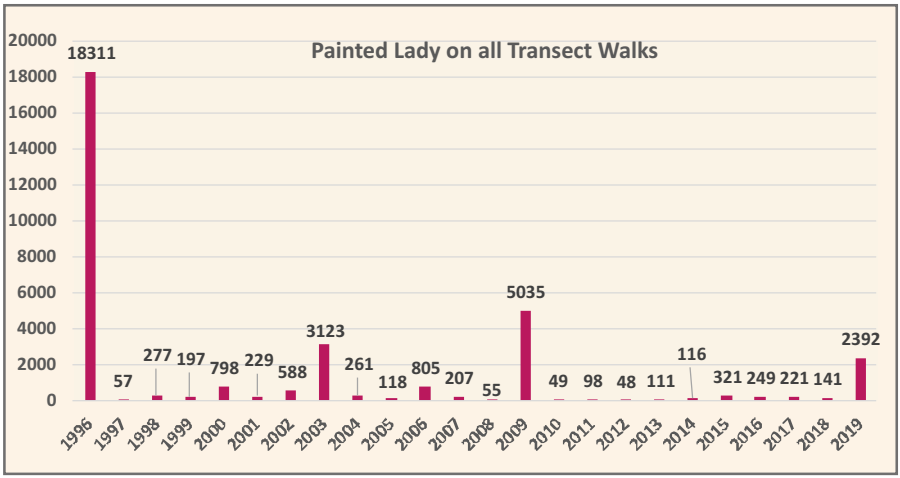
Winning Species in 2019

The **Painted Lady** is not a native species, so we do not regard it in the same way as the other four winners, but it is interesting to look at the great variation in the numbers seen in any year.

As can be seen below, 2019 was the best year since 2009, though still a long way short of the magic year of 1996. Higher numbers than those recorded in Dorset were recorded on the coast of eastern Scotland and in the north east of the UK, suggesting a big inward migration from Scandinavia.

The Painted Lady can breed here in our summers, but we have not seen any evidence of it being able to over-winter here.

As Dr Martin Warren told us in his 2020 AGM talk, this butterfly is now known to migrate from further south in Africa than used to be thought, meaning it migrates a greater distance than the legendary Monarch in the USA. This is not done in one generation: it breeds through multiple generations as it moves north, making it to the UK in variable numbers, and reverse migrates at very high altitudes at the end of the summer.



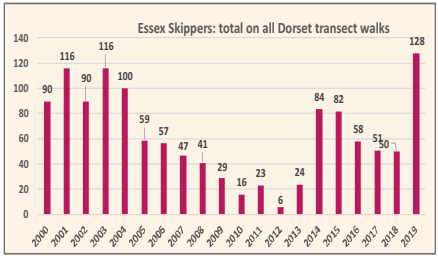
Winning Species in 2019

Essex Skipper. Photo: Mark Pike

The **Essex Skipper** is our first native winner. Its count was up at 77% of its sites. The highest count was 37 at Bindon Hill (near Lulworth).

It is not easy to tell the Essex Skipper apart from the Small Skipper, so it is difficult to know how far these increases are real, or whether they represent better differentiation of the species by recorders.

The best way of telling the two species apart is to try to see the tips of the antennae. They must be black with clear cut offs of the black areas which are visible from the underside too. If the antennae are greyish, brown or patchy black, it is not an Essex.

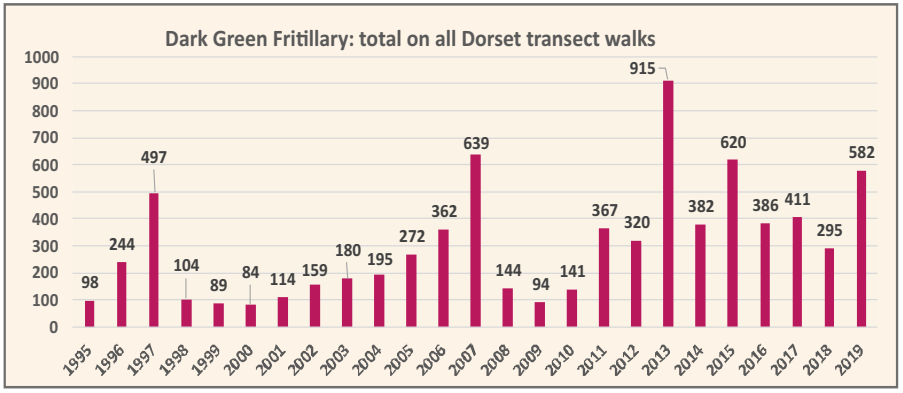


Dark Green Fritillary are never seen in large numbers in any one place.

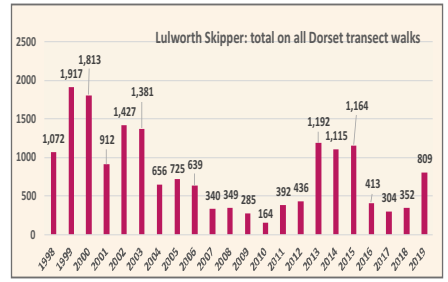
2019 numbers were well up: 78% of walks had gains over 50% in the short term, and 72% in the long term. The highest single count was at Ballard Down, with 156.

Dark Green Fritillary. Photo: Paul Swann.

Winning Species in 2019



The Lulworth Skipper had 78% of its walks up in the short term and 56% in the long term and it is looking to be making something of a recovery from the low between 2007 and 2012.

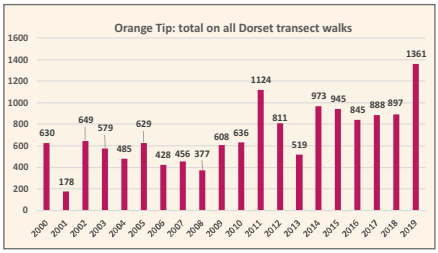


The times of the year when it is flying have become very unpredictable. Once upon a time, it was reckoned to be flying between July and mid September. However, weather changes over the last few years have stretched the flight period in some years from the last week in April to early September and moved the peak period to June/July. Looking at website records, rather than transect walks, the first sighting in 2019 was 11 May, and the last was 22 August.

Lulworth Skipper. Photo: Brian Arnold.

Winning Species in 2019

Orange Tip. Photo: Shona Refoy

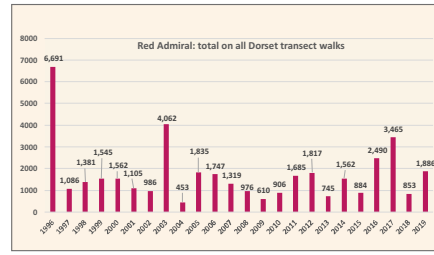


The last of our five winners is the **Orange Tip,** and it is lovely to see this harbinger of spring doing well, though it did not do as well in the south of Dorset as the other areas. As the one of the four native winners this year which is regularly seen in gardens, its presence or absence is noticed more by the general public than the others. Plant garlic mustard or sweet rocket so it can breed in your garden.

51% of its walks were up in the short term and 62% up in the long term. Highest counts were Moors Valley and Kingcombe Redholm, both scoring 98.

Other Species doing well

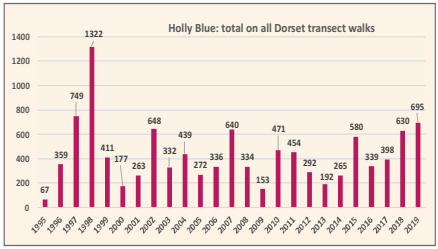
The Red Admiral: a mainly migratory species, showed a big increase on 2018, which was a very bad year for it. Transect walks recorded 1,886, compared with 853 the previous year. The walk at Hethfelton, near Wareham, recorded 115.



Other Species doing well

Holly Blue made its third highest total since 1995. This species fluctuates radically, in tandem with its parasite, an ichneumon wasp called *Listrodromus nycthemerus* which lays its egg into the caterpillar, killing the individual butterfly off when the chrysalis stage is reached

Holly Blue. Photo: Mel Bray

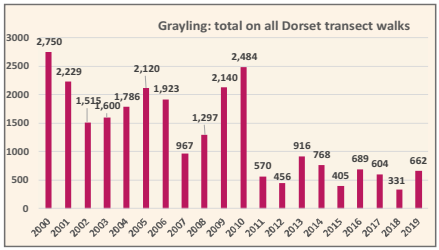


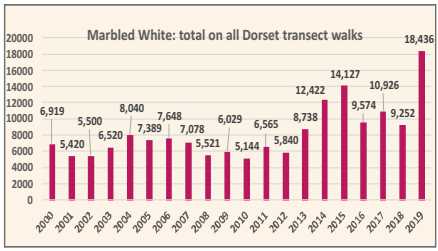
The **Grayling** did well in the short term, with 662 records, which was a good recovery on 2018 but far below its annual average of 1311.

It is not a species seen in the north of Dorset any more: it has disappeared from its old haunts on the chalk downs.

The **Marbled White** achieved a record count, nearly twice that of the previous year - up from 9,252 to 18,463. Durlston East recorded 2,224.

It is a species found in a variety of habitats, but tall grass with no recent disturbance or fertilisation is needed.





Other Species doing well

Grizzled Skipper.
Photo: John Woodruff

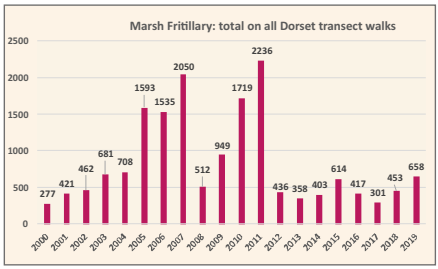
Over half of the **Grizzled Skipper's** 19 sites increased by 58% in the short term, but fell by 53% in the long term. It managed an impressive count of 81 on the Cerne Giant walk.

Not to be confused with the Dingy Skipper, which is... dingier!

The **Marsh Fritillary** saw a good increase with over half its 17 sites increased by 53% in the long term. The total was 658, well up on 453 in 2018, but it is not doing well compared to before 2012.

This is another butterfly which can be hit hard by parasitoid wasps, this time Cotesia Bignellii.

The eggs of this butterfly are laid in June/July on Devil's-bit scabious. The caterpillars live in communities within silken webs making a specially thick web so they can over-winer in it, hidden down in grass tussocks. They emerge in February/March, pupating in April/May with the adults appearing in late May/June.



Marsh Fritillary caterpillars. Note, the red *Trombidium breei* mite on the central caterpillar is nothing to do with the parasitic wasp, and seems not to harm its host. Photo: Mark Pike.

Losing species in 2019

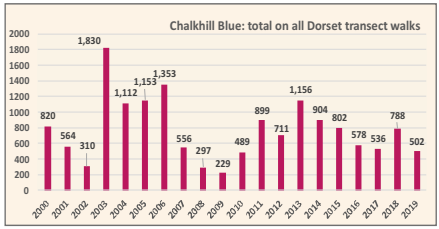
We class a species as a loser if its count decreases (on sites where it is recorded):-

- By more than 50% over the previous year (short term)
- By more than 50% on it annual average (long term)

There were no species which 'lost' in both categories this year, but three species declined against their annual averages:

- Chalkhill Blue
- Small Tortoiseshell
- Clouded Yellow

The **Chalkhill Blue** has been causing us concern, and 2019 saw the fifth lowest count since 2000.



Chalkhill Blue. Photo: Richard Belding

Losing species in 2019

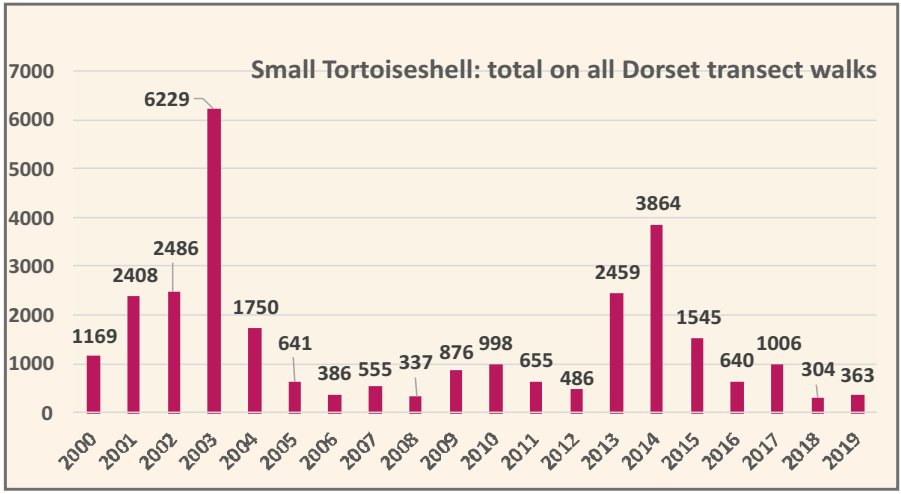
It has declined particularly in the west of Dorset, though it remains fairly strong on Portland and is present in north Dorset and a few sites in Purbeck.

We have been appealing for people to visit sites where Chalkhills have been recorded in the past, and send our very grateful thanks to those who went on searching even when they were not finding any for this species. We would like to continue these searches, to ensure the species is genuinely in decline and not just under-recorded. Please contact Robin George (see inside back cover) if you can help.

The **Small Tortoiseshell** is in trouble nationally, having lost three-quarters of its population since the 1970s.

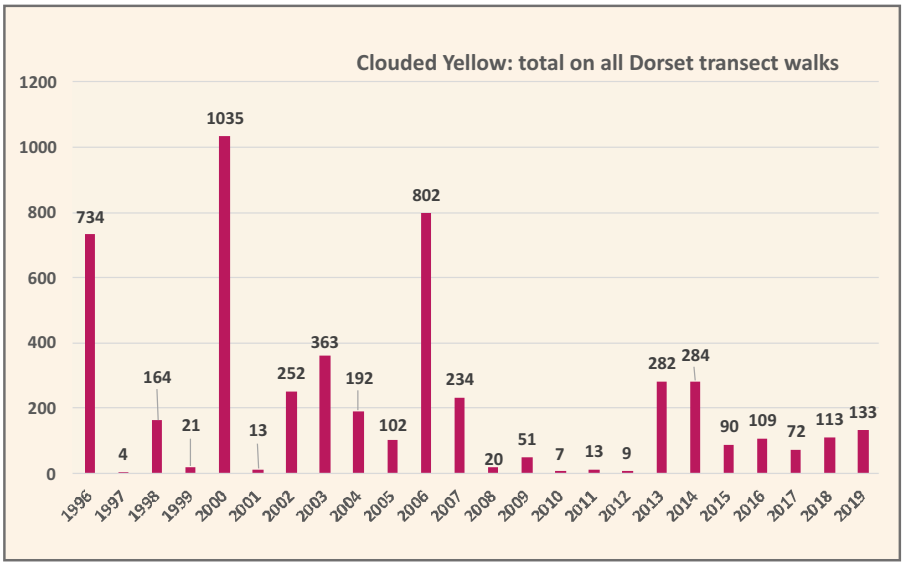
Our transect count is at its third lowest since 2000. The cause is not known: it could be climate change, pollution or parasites.

Small Tortoiseshell. Photo: Clive Hill.



Losing species in 2019

The **Clouded Yellow** is not a native butterfly, so it isn't a 'loser' in the same sense as the others, but the numbers were certainly low. Having said it is not a native, it is known to have overwintered on the Bournemouth undercliffs and there is a chance it will survive on the Weymouth Relief Road cutting. The highest single count was 17 on the Cerne Giant walk.



Butterfly Conservation works to help moths as well as butterflies and has recently published the "Atlas of Britain and Ireland's Larger Moths". This amazing piece of work uses 25 million moth records pulled together since the start of the National Moth Recording Scheme (NMRS) in 2007.
More info on the NMRS at www.mothscount.org.

For local moth information, see www.dorsetmothgroup.info

Species rare in Dorset

The Small Pearl-bordered Fritillary (SPBF) continues to just hang on in Dorset, and the National Trust, on whose land it is found, are working hard to help it survive.

The start of their flight period was later than previously, only being seen first on 6 June; there were then a lack of sightings, causing come concern, though it was a bad weather period, but the butterfly reappeared from mid June and ten individuals were recorded by the National Trust, though a BC member found 14.

The National Trust's observations suggest that the SPBF appears to favour damp, north-east facing sites with

Small Pearl-bordered Fritillary. Photo: Brian Arnold.

mixed bracken, purple moor grass and bramble-rich areas, with shelter belts provided by gorse. To provide more of this favoured habitat, they have modified large stands of gorse, removing some and cutting wide sheltered rides through others.

The **Purple Emperor** was seen in small numbers again in 2019, with a total of seven sightings in mid July.

Six reports were from Garston Wood/West Woodyates (on the Wiltshire border) and one from Alderholt, which also provided a sighting in 2018.

We may have a small colony of this butterfly in the Cranborne - Verwood - Alderholt triangle.

Exotic species

The following observations are from general recording rather than transect walks.

A record number of nine **Long-tailed Blues** were recorded in Dorset. Others were seen across the country from Cornwall to Kent, and it is thought they came in on a weather front, and that the already-mated females laid on one of their foodplants: Broad and Narrow-leaved Everlasting Sweet Pea, Broom, Mange-tout Peas or Bladder-senna.

None were recorded in 2017 or 2018. It is not thought able to survive our winters.
There may be more around than we realise, as one photographed at Alners Gorse was only spotted because it landed right in front of Mark Pike. It is a very small butterfly, and without looking closely it is easy to think it is just another blue; look for the tails and the very different underwing patterning.

Long-tailed Blue at Alners Gorse. Photo: Mark Pike

One **Monarch** popped up in October, in Lyme Regis, and we have picked up that one was also seen at this time in Devon. Since 2000, only one year has reached double figures (14 in 2001) and most years have been in very low figures. Given this sighting was in October, the butterfly may well have been migrating south in the USA and been blown across the Atlantic.

Exotics

Large Tortoiseshells were once comparatively plentiful in Dorset, but became extinct here in the 1950s.

Large Tortoiseshell.
Photo: Mike Gibbons

In 2019 we received reports of what were probably seven individuals: four on Portland in February and March and three at the end of June at Portland, Winspit and Thorncombe respectively. No evidence has yet come to light of them breeding here, but we would be very interested in any proof of mating or of non-adult stages. Please continue to send in any sightings of the adult butterfly, with grid references and any observations of behaviour, especially if it might be courtship.

One **Continental Swallowtail** was seen, on 5 August at Hardy's Monument (south west of Dorchester). This butterfly is different to the British Swallowtail, which is only now found in the Norfolk Broads.

Three **Glanville Fritillary** were seen in north Dorset, but these were almost certainly releases, which we suspect have been taking place for some years, but none have resulted in any permanent population being established.

Butterfly Conservation does not support random releases: they rarely work. The very successful re-introduction of the Large Blue in Somerset was due to years of research on the needs of the species and the preparation and maintenance of a suitable habitat.

Exotics

A single **Queen of Spain Fritillary** turned up on 11 August on a farm near Horton (close to Wimborne).

Queen of Spain Fritillary. Photo: James Phillips.

The Dorset Branch of Butterfly Conservation is one of 32 branches of the national charity which works to save butterflies, moths and the environment.

Butterfly Conservation

We have relied a lot on government grants in the past, but the future situation is very uncertain, so if you could leave us something in your will, that would be very helpful.

Remember that if you want the money to come to the Branch rather than the national society, you will need to specify that.

Garden Butterflies

The scheme for collecting garden records separately was started many years ago by Dr Margaret Vickery, who analysed such records from all over the UK. Nowadays, there are two ways you can participate: via completing a paper record sheet and sending it to Adrian Neil (see inside back cover) or you can enter them on the national website:- www.gardenbutterflysurvey.org

In 2019 a total of 87 records were received, 52 on paper and 35 online, giving us quite good coverage of Dorset. Our very grateful thanks to everyone who sent them in.

Garden records give more an indication of the range of butterflies – where various species are seen – than of their abundance. Recorders will mostly not record every single occurrence of a species but just perhaps the first one seen at different times of year, spring, summer and autumn.

The impression gained from looking at the paper records was that overall numbers of garden butterflies were down, for example many people reported a lack of Common Blues and Tortoiseshells. This contrasts with the large overall totals from the transects, an explanation for which may be that the latter included huge numbers of

Garden view. Photo: Lyn Pullen

Garden Butterflies

butterflies like the Meadow Brown, whereas in a particular garden just one or two would be noted.

Altogether 39 species were recorded in gardens: a record equalling that of 2018. This compares to the figure of 49 for all species seen in Dorset during 2019: a number of butterflies with specific habitat requirements are unlikely ever to be seen in gardens. 36 of these species were native and 3 non-native or exotic.

If you want some tips on plants to grow which will encourage butterflies and moths to your garden, do have a look at the gardening page of our website. It is important to not just provide nectar plants for the adult butterfly across a long season, but also to provide food for the caterpillars - and to accept that this will mean some nibbled leaves! If you ever see some leaves on a plant pulled together with some cobwebby material, pull them open very gently and you will often find a

Common Blue. Photo: Lynda Lambert

small caterpillar inside: say hello and wrap him up again so he can make it through to an adult butterfly or moth. There are over 2,000 species of moth in the UK, but only around 60 species of butterfly, so you are more likely to be looking at a moth caterpillar.

If you want to know what caterpillars feed on what plants, have a look at the superb book "Foodplant list for the caterpillars of Britain's Butterflies and Larger Moths" by Tim Crafer, published by Atropos.

Wider Countryside Survey

Part of the WCS Sadborow walk in west Dorset. Photo: Lyn Pullen

The Wider Countryside Survey (WCS) is a national scheme, aimed at surveying randomly selected areas in the UK for butterflies. This is to attempt to achieve a better picture of how butterflies are doing generally, rather than on Reserves or other hot spots. They are walks of approximately 2km, undertaken once in July and once in August (or more often if the recorder can do it).

It was another good year for the survey in Dorset. Thanks to the stalwart efforts of an intrepid band of recorders, a total of 66 squares were surveyed, considerably more than the total for any other branch and the highest ever for us - up from 61 in 2018. Six of them were done by BTO (British Trust for Ornithology) recorders. The total of 34 species seen was one less than in the previous year.

In line with national results and those from the Dorset transects, there was an increase in the total number of butterflies counted, up to 9,123 from 7,520 in the previous year: a rise of 21%. Even though more squares were covered, the average number of butterflies recorded per square still rose, from 123 to 138 (up 12%).

The five most abundant species were (in descending order of frequency) Small White, Meadow Brown, Gatekeeper, Large White and Ringlet. Together they accounted for two thirds of all butterflies seen. It is something

Small White. Photo: Shona Refoy

Wider Countryside Survey

of a surprise to see Ringlet in such a high position: they have been rising steadily in recent years and have now ousted Speckled Wood from the top five. Several popular butterflies fared less well: Red Admiral was in 8th position, Peacock in 12th and Small Tortoiseshell in a lowly 16th place. This last species was even exceeded by Lulworth Skipper of which there were 87 sightings compared to the Small Tortoiseshell's 83 (it helps that a few of the survey's squares are on the Lulworth range or near Worbarrow Bay). It was noticeable that Small Heath, coming in 11th spot, did particularly well.

Small Heath. Photo: Mel Bray

We have probably all heard that it was a good Painted Lady year. A total of 600 were seen in the survey, up from only eight the previous year, placing them in 10th position. However, that number is nothing like the total of more than 1,000 recorded in 2009. By way of contrast, only 19 Clouded Yellow were observed although that was an increase of five on the 2018 figure.

The drop in the species total from 35 to 34 was accounted for by no sightings of Orange Tip, Purple Hairstreak, or White-letter Hairstreak in 2019, but gains of Silver-studded Blue and Small Blue. Six of the last were seen, the first since 2014. The smallest numbers of any species recorded were White Admiral (1) and the Silver-studded Blue (2).

The numbers of Chalkhill Blue are causing some concern in the county, and their decline is confirmed by the WCS. Although a remarkable total of 44 Chalkhills was reported, a

Wider Countryside Survey

number far larger than usual, the increase was almost entirely due to a square on Portland being surveyed for the WCS for the first time. Altogether 37 were seen there, 25 in July and 12 in August. The only other square to record any sightings was one at Compton Abbas in north Dorset, where seven were reported, around the average for the survey in the county as a whole over the past few years.

Chalkhill Blue.
Photo: David Simmonds

Only four Adonis Blue were recorded, but that compares with the same number being seen in the whole of the previous decade and in many years there were none, so to a degree that is encouraging. The first brood of the Adonis is too early for the WCS scheme to fully cover it.

There are still several squares which we have been allocated but that it has not yet been possible to survey. We hope to be able to find some more recorders in 2020 to help to increase the number of squares we can cover to something approaching 70.

Whether we will be able to do any WCS surveying in 2020 remains to be seen (this is being written in March 2020, with the country in lockdown against the Covid-19 virus), but if you would like to become involved, please contact Adrian Neil (see inside back cover for contact details). We have particular need of walkers to cover Thornford, Sherborne, Gillingham, Knowlton, Burton Bradstock, Winterborne Abbas and Dewlish, as well as the army camp in Blandford.

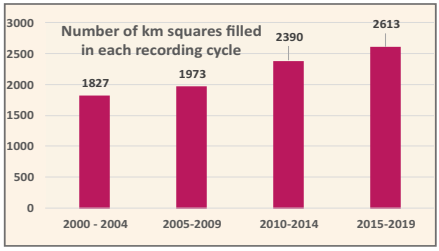
For more information on the national scheme, go to www.ukbms.org/wcbs.

Record number of squares filled

Nearly 90% of the map covered!

We record butterflies in five-year cycles, and in kilometre squares. So the map of Dorset is divided into 2,915 squares and we try to record butterflies in all of them. As we go, our progress is mapped, so each kilometre square is gradually coloured in, and we can see where we still need to record butterflies by looking at the 'white holes' left. At the end of the five years the map is wiped clean and we start again, but the data collected is used to analyse how our butterflies are faring. This is a measure of range, not abundance: i.e. it shows where a species exists, not how many butterflies of any species there are in that square.

The recording cycle ending in 2019 saw a marathon effort, culminating in butterflies being recorded in 2,613 squares, or very nearly 90% of the total! Some squares will always be impossible, as they are inaccessible, such as those on the army ranges. This is the best effort yet this century, as can be seen by the graph. It was beaten by a total of 2,857 in the last century, but that was across a 15-year period, from 1980-1994.

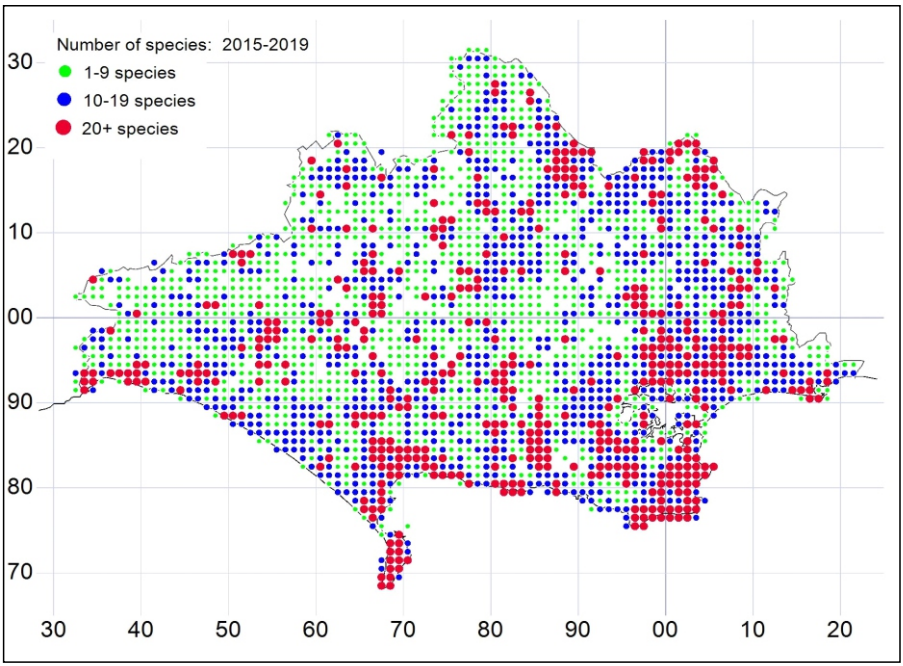


It isn't possible to be definite about why we are doing better than we used to, but the reach of the internet must have something to do with it. We owe especial thanks to our website Techie, Dom Greves, in collaboration with Robin George, for their work on showing which white holes remain to be filled on an almost live basis, which means those wishing to 'fill' white holes can know which holes need to be

Record number of squares filled

visited, so they are not duplicating the effort of other people. We think this is also partly the reason for the huge increase in website records, which went up by 99% on 2018, reaching an all-time high of 89,204!

If you look at the map on the website, you will see that it does not just show a square as 'filled' or not, but uses different colours to show which squares have up to nine species, which have over ten species, and which have over twenty species recorded in them. You can also click on a square to see exactly which species have already been recorded in any square.



The effort was amazing, and we thank all of you who submitted records, and the verifiers who checked an incredible number of records, as well as Bill Shreeves and Robin George for their work on the database and the analysis of records.

Dorset butterfly atlases

The recording of butterflies in kilometre squares gives us the chance to look not just at how various species have fared over a five year period, but over longer periods as well.

The concept of the five-year recording cycle was set up at the beginning of the twenty-first century, but Dorset has two publications looking at records up to nearly the end of the twentieth century as well as ones examining the subsequent five-year cycles.

If you are interested in seeing this earlier recording and anlaysis, we list below the documents or websites where the information can be found.

Butterflies of Dorset (1984) by Jeremy Thomas & Nigel Webb, is a book, published by the Dorset Natural History and Archaeological Society. This mainly covers 1970-1984, but pulls on older records for rarer species. Out of print but used copies come up on Amazon from time to time.

New Atlas of Dorset Butterflies (1998) by Jeremy Thomas, Richard Surrey, Bill Shreeves & Carolyn Steele, is also a book, published by the Dorset Natural History & Archaeological Society. This updates 'Butterflies of Dorset' and takes the records up to 1997. Out of print but used copies come up on Amazon from time to time.

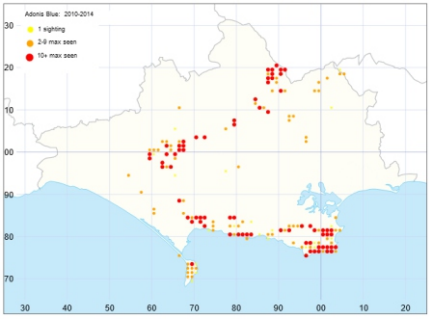
1995-1999 was covered by the Dorset Branch of Butterfly Conservation in a 36-page document in A4 format. We are working on scanning this and putting it up on the website.

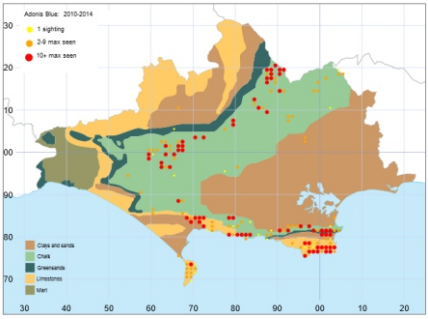
2000-2004 was also produced in A4 format, running to 48 pages. We are working on scanning this and putting it up on the website.

Dorset butterfly atlases

The next period is covered on the website. It compares distribution trends both in the long term, comparing the 1970-1984 period with that of 2000-2014, and in the short term, looking at 1995-1999 compared to 2010-2014. It analyses the change in the ranking of the various species over these comparative periods.

The charts are accompanied by a map, showing the distribution of a species across Dorset, and turning on the geology layer of the map shows how where some species are found depends on the underlying geology, because this creates the habitat. One of the reasons Dorset is such a good county for the number of butterfly species to be found is that we have a very varied geology; other reasons include our southern location, allowing some species to live when it is too cold further north, and our coastal areas meaning we are among the first to welcome migrant species from the south.





The pictures to the left are for the Adonis Blue. The key for the geological map at the bottom is probably too small to read, but the green denotes chalk and the pale orange shows limestone.

These website pages can be found by going to www.dorsetbutterflies.com, 'Recording', then 'Butterfly Atlases'.

Photo on back cover: Large White by Shona Refoy

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